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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,043	10/01/2003	Ciby Thomas Thuruthiyil	H1897	7701
23623	7590	07/06/2004	EXAMINER	
AMIN & TUROCY, LLP 1900 EAST 9TH STREET, NATIONAL CITY CENTER 24TH FLOOR, CLEVELAND, OH 44114			EVERHART, CARIDAD	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.		Applicant(s)	
	10/677,043		THURUTHIYIL ET AL.	
	Examiner		Art Unit	
	Caridad M. Everhart		2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-18, 23, 26, 27, 29, 30, 32, 33, 35, 37, 39 and 41 is/are rejected.
- 7) ☒ Claim(s) 6, 19-25, 28, 31, 34, 36, 38, 40 and 42-44 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10-1-2003</u> . | 6) <input type="checkbox"/> Other: ____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5,7-12,14-18,23,26,27,29,30,32,33,35,37,39,41,are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheitinger, et al. (US 5,769,540) in view of Schreutelkamp, et al. (Appl. Phys Lett, Vol. 61, No. 19, Nov. 1992 pp.2296-2298)

Scheitinger et al disclose a monitor subsystem and a control subsystem(col. 3, lines 35-46). The data is analyzed by microcomputer(col. 7, lines 33-40). The data is used to control the process (col. 9, lines 46-67). The process can also be stopped based on the data analysis (col. 16, lines 25-30). It is implied that the signal is sent automatically from the analyzing component to the control component, and this would clearly imply either transfer of the information by wired or by wireless means. The processes may include rapid thermal processes which is implied by the disclosure of rapid heating systems(col. 2,lines 13-17). There is also a display device which is interpreted to satisfy the limitation of a monitor(col. 7, lines 12-18). Data relating to the measurements at a plurality of positions on the substrate are related to stored data and compared to stored data(col. 11, lines 52-65 and col. 12, lines 1-15) .

Scheitinger et al is silent with respect to silicidation, although Scheitinger et al does disclose the formation of new films with a desired thickness(col. 2, lines 28-32) and semiconductor processing (col. 1,lines 30-33).

Schreutelkamp, et al discloses in situ emissivity measurements during rapid thermal silicidation using cobalt. The emissivity is monitored in situ(last paragraph of page 2297). The process can be controlled using these measurements, as Schreutelkamp discloses that the process can be stopped using the measurement of the emissivity(first column of page 2297). The data is related to the changes in the substrate surface with respect to the silicidation.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the apparatus taught by Scheitinger et al in a silicidation process

because Schreutelkamp et al teaches that silicidation can be monitored in situ and controlled using emissivity measurements which implies a process which is automated and Scheitinger et al disclose an apparatus and process for in situ measurement and control of thermal processes using emissivity and/or temperature measurement(col. 5, lines 65-67) including film formation as shown in the cited portions of Scheitinger et al above, which would include silicidation.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schietinger et al in view of Schreutelkamp, et al as applied to claim1 above, and further in view of Hause, et al. (US 6,166,354).

Schietinger et al in view of Schreutelkamp is silent with respect to a microscope.

Hause et al is relied upon for its teaching that a thermal treatment system can include a microscope in order to view a sample in a thermal treatment system(col. 7, lines 8-19).

It would have been obvious to one of ordinary skill in the art to have combined the teaching of Hause et al with the process and apparatus taught by Schietinger et al in view of Schreutelkamp because Schietinger et al in view of Schreutelkamp teach that the sample can be monitored in situ, and Hause et al also teach in situ monitoring of a sample in a thermal treatment apparatus, and the viewing with a microscope can enhance the viewing with a monitor.

Allowable Subject Matter

Claims 6,19-23,24,25,28,31,34,36,38,40,42,43, and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caridad M. Everhart whose telephone number is 571-272-1892. The examiner can normally be reached on Monday through Fridays 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


CARIDAD EVERHART
PRIMARY EXAMINER

C. Everhart
6-30-2004